

# Wupatki Trails/Lenox Corridor Meeting

Wednesday April 25, 2012  
6:30 – 8:30 PM





# ***Welcome and Introductions***

**Supervisor Liz Archuleta**  
**District 2**  
**Coconino County**



# *Opening Remarks*

**Natural Resources Conservation Service  
(NRCS)**

**Emergency Watershed Protection Program  
(See Brochure)**

# ***Background and Updates***

## **Flood Mitigation Planning since 2010:**

- **Broad-based Collaborative Process**
  - **Participation of the Public, Technical Experts and Multiple State and Federal Agencies**
- **Understand the Science**
  - **Hydrology, Hydraulics, Sediment Transport**

# ***Background and Updates***

## **Flood Mitigation Planning since 2010:**

- **Conceptual Plans**
  - **Develop and Fully Vet All Possible Alternatives (6 Pac Design Concepts)**
- **Secure Funding**
  - **FEMA, NRCS, Federal Highways and More**

# ***Background and Updates***

## **Flood Mitigation Planning since 2010:**

- **Preliminary Plans**
  - **Select Most Feasible Alternatives and Develop Preliminary Plans**
- **Present to Public and Gather Input**
  - **March 2012 Corridor Meetings**

# *Preliminary Plans*

## Integrated Design Critical

- Watershed Restoration on Forest
- Mixture of Natural Channels, Lined Channels and Individual Property Protections in Neighborhoods
- **Forest Measures Contingent on Neighborhood Measures and Vice-Versa**

# *Preliminary Plans*

## **Integrated Design: *Technical Considerations***

- If only neighborhood measures are constructed, then they would be overwhelmed by sediment
- If only Forest Service measures are constructed, then potential instability within the residential area may migrate upslope and lead to possible failure of the measures upon Forest Service land



# *Preliminary Plans*

## Why This Approach?

- Key Issue is Volume of Sediment
- Designs are Most Efficient At Reducing and Transporting Sediment
- Designs Avoid Diverting Water
- Designs are Most Cost Effective
- Designs are Supported by Current Funding Sources

# ***EWP Funding***

## **EWP is Single Best Opportunity for Flood Mitigation**

- **Very Fortunate to Have Received Funding**
- **Very Tight Timeframe – 220 Days**
- **Very Competitive Funding Environment**
  - **Federal Agencies Facing Budget Reductions**
  - **FEMA Grant Proposals Not Funded**
  - **Army Corps Technical Assistance Not Funded**

## ***EWP Benefits***

### **EWP Projects Will Improve Safety and Property Value**

- **County is Offering to Provide this Service in Exchange for Drainage Easements**
- **Easements will Allow for Safe and Stable Flows through Neighborhoods**
- **Easements Necessary for Work on Forest**

# *Remaining Risks*

## **EWP Plans are Effective**

- **However Flood Risks Will Remain**
  - **Larger Flood Events Than Those Designed For Will Occur**
  - **Diverting Water Will be Avoided so that Excessive Flows Will Continue to Flow Where They Have Historically**
- **Securing and Maintaining Flood Insurance is Critical (See Brochure)**

# ***EWP Process***

## **Very Complex Process (See Flowchart)**

- **Many Feasibility Issues**
  - **Different for Each Corridor**
- **Plan to Move Forward Where Most Feasible**
  - **Where Right of Entry Forms Have Been Secured to Conduct Design Surveys**
  - **Learn from Less Challenging Corridors**
  - **Apply to More Challenging Corridors**

# *Right of Entry Forms*

## Necessary to Move Your Corridor Forward

- Forms Do Not Obligate Property Owners to Any Decision or Future Action
- Forms Only Provide County Access to Property to Perform Topographic Surveys, Engineering Assessments and Environmental Clearances
- This Work is Essential for Refining and Finalizing Designs
- **County Cannot Move Process Forward Without Signed Rights of Entry Forms. Forms are Required for All Properties Affected by Preliminary Plans**

# ***Public Involvement***

## **Involvement and Participation Critical**

- **Provide Right of Entry Forms for Survey**
- **Corridor Meeting Questions and Feedback**
- **Understand and Evaluate Information**
- **Participate in Drainage Easement Discussions**

**By Working Together We Can Achieve  
Great Outcomes**



# ***Watershed Restoration and Flood Mitigation Measures***

## **Natural Channel Design**



# PROPOSED WATERSHED RESTORATION PLAN FOR FLOOD RELIEF

## WUPATKI TRAILS / LENOX CORRIDOR



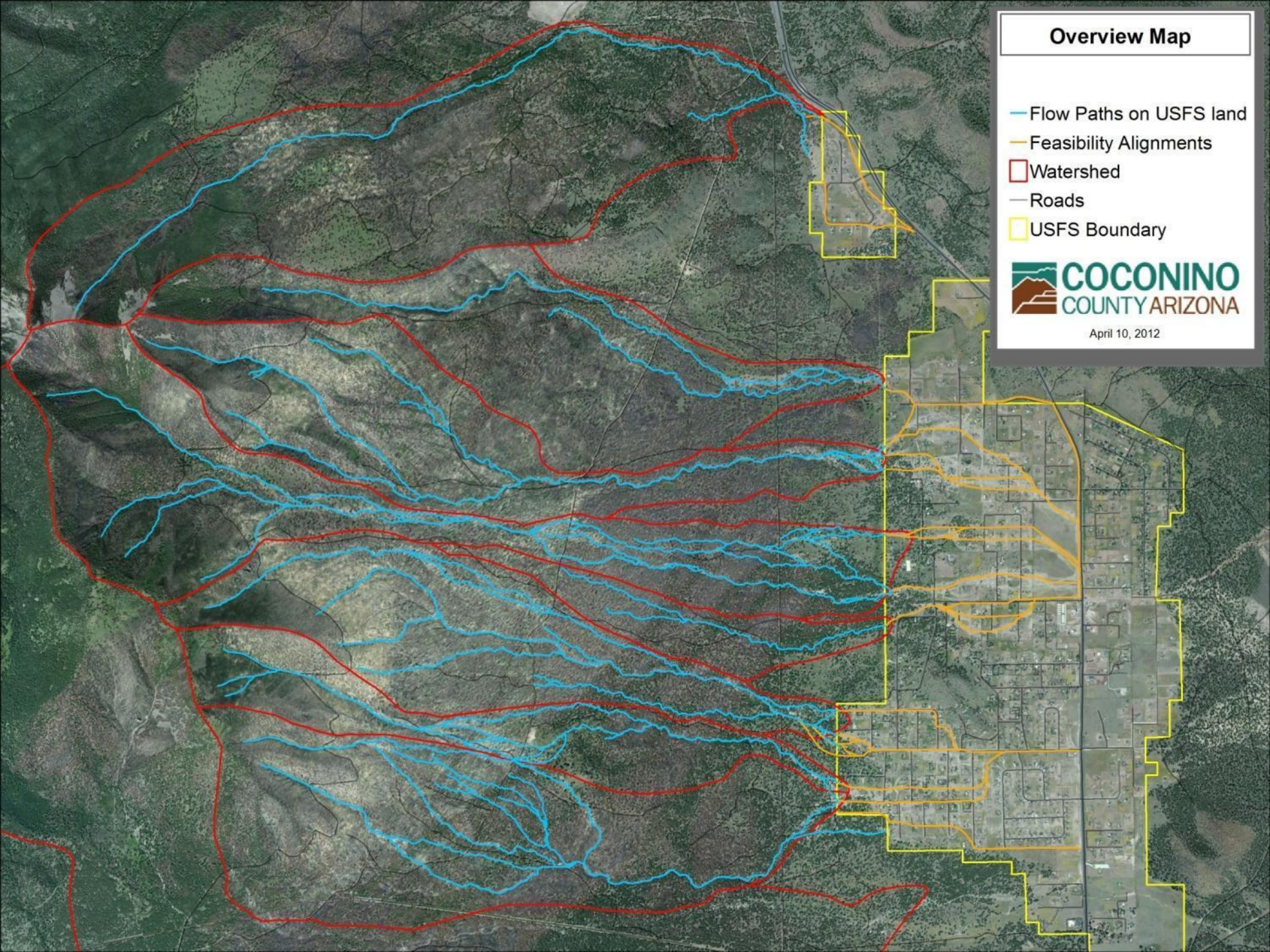


## Overview Map

- Flow Paths on USFS land
- Feasibility Alignments
- Watershed
- Roads
- USFS Boundary

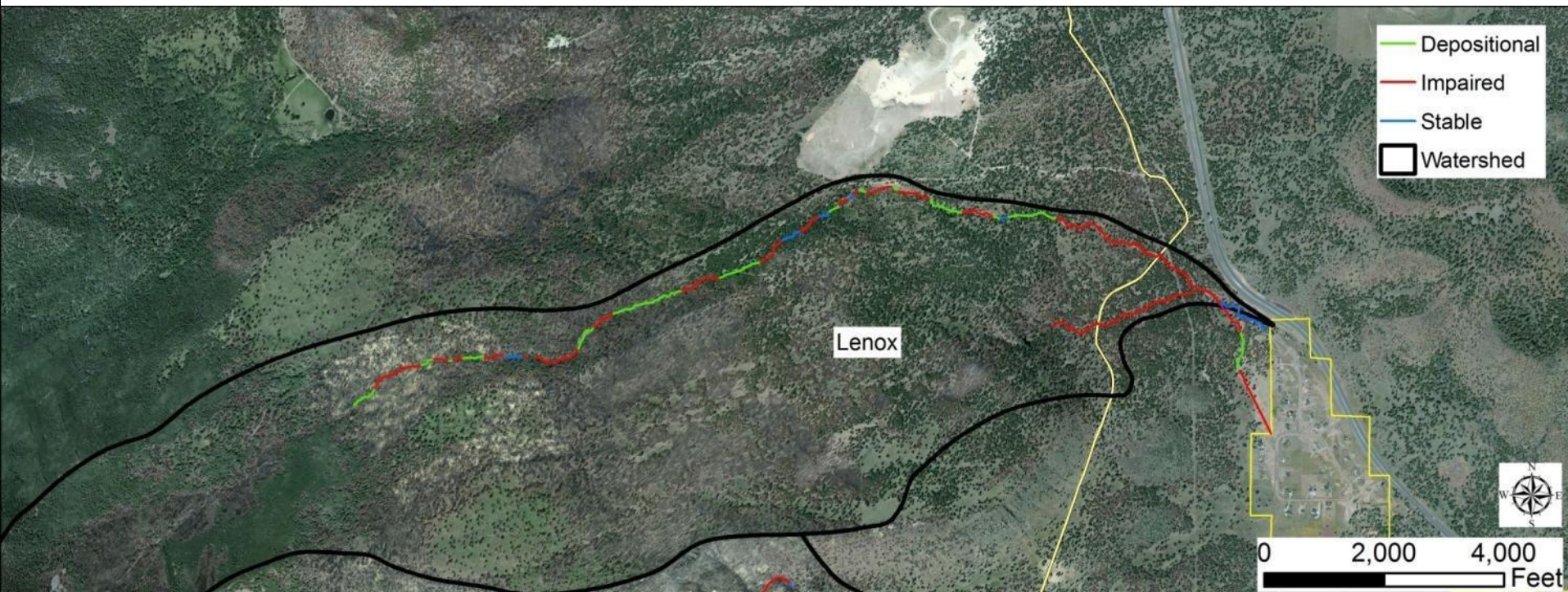


April 10, 2012





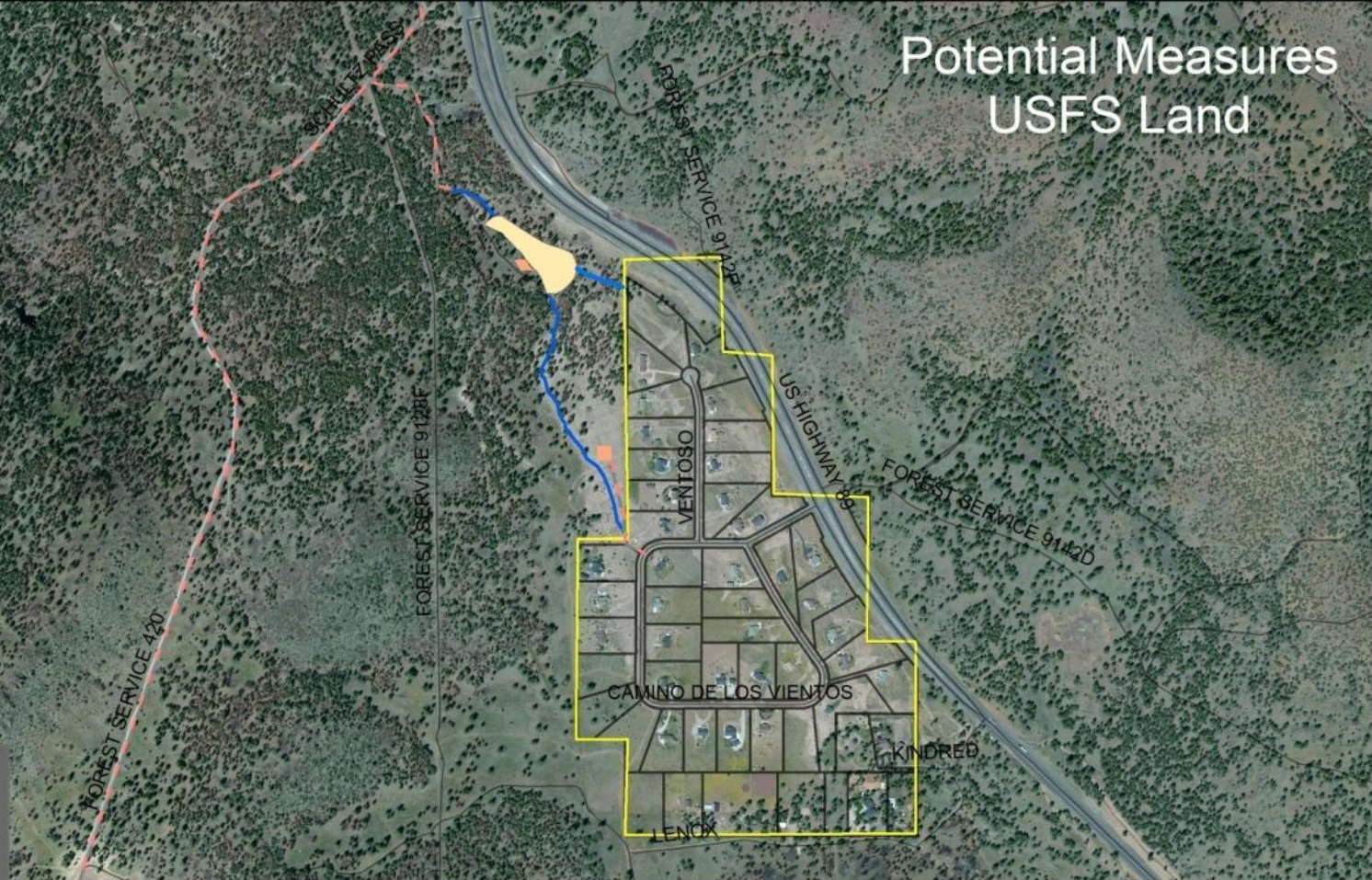
# Wupatki Trails/Lenox Watershed Sediment Study Results



- Total sediment source from streambanks, roads, and hillslopes provide more sediment than channels can carry ~8,981 tons/yr
- Streambanks contribute ~75% of this total
- Rehabilitation of eroding channel banks (stabilization) will reduce sediment production, as well the reactivation of alluvial fans
- Post restoration transport across the USFS boundary is expected to be 130 tons/yr
- Single thread channels through the neighborhood could feasibly carry post-restoration sediment loads



# Potential Measures USFS Land



## Wupatki Trails/Lenox Watershed Mitigation Measures (Preliminary)

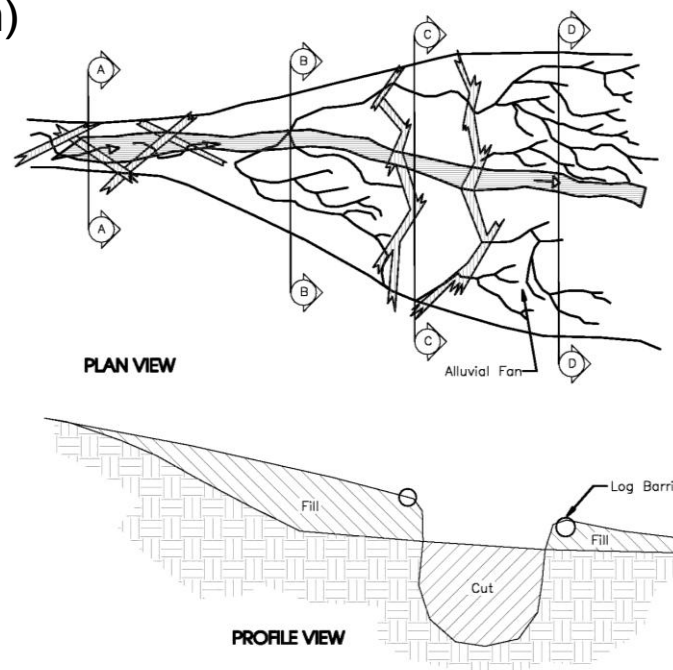
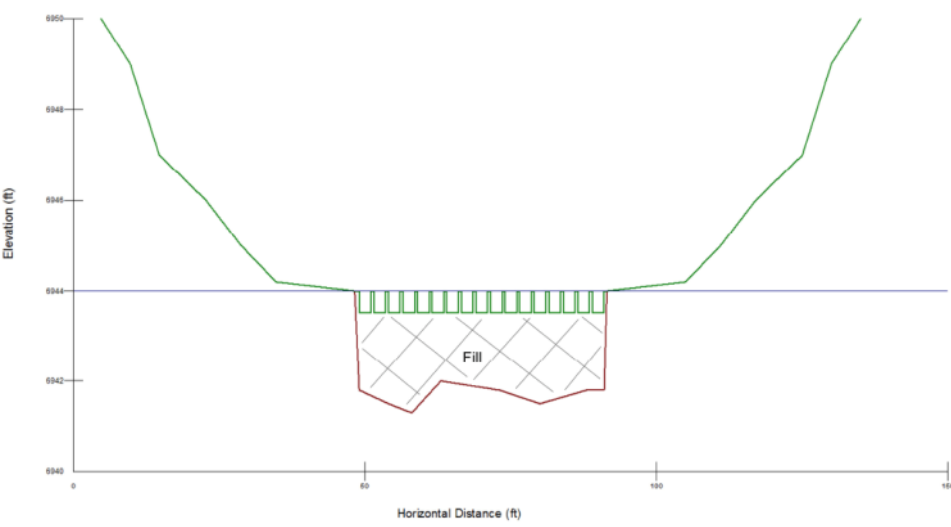
- Channel Stabilization
- Sediment Storage Area
- Access Road
- Staging Area
- USFS Boundary

## Treatment Measures on USFS Land

Staging/Refueling/Washing Areas  
Access Roads: Recommissioned and New  
Low-Water Crossings  
Channel Stabilization  
Sediment Storage Area (Alluvial Fan Rehabilitation)  
Transition Channels  
Bank Stabilization  
Revegetation

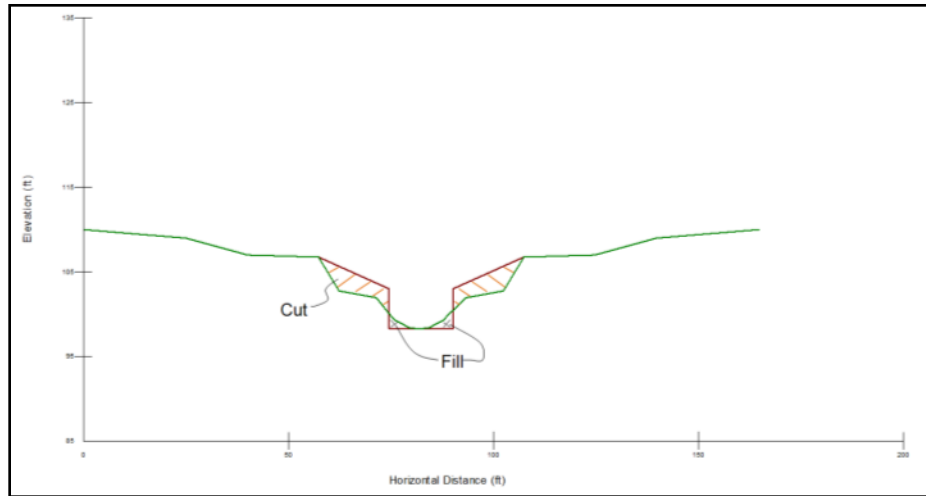


# Sediment Storage Area (Alluvial Fan Rehabilitation)

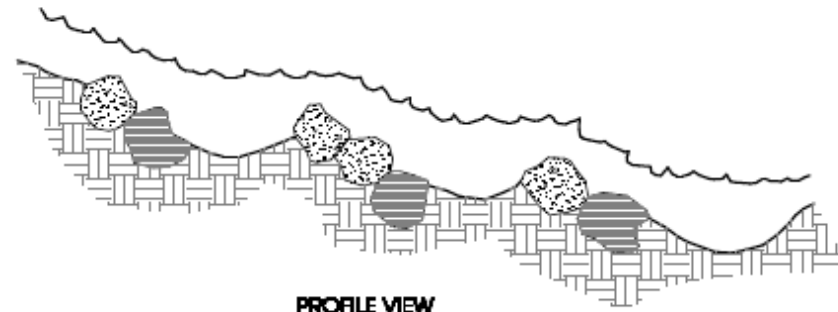




# Channel Conversion (from incised to stable)



# Single - Thread Channel Conversion from incised to stable





# ***NEPA Process and Timelines***

**Coconino National Forest  
(See Handouts)**

# **SCHULTZ SEDIMENT REDUCTION PROJECT**

## **NEPA PROCESS - 2012**

*February/March:* Proposal developed and submitted by  
Coconino County.

Internal agency scoping

(Forest Plan consistency, need for design features, and  
feasibility)

*March 15-30:* Public Scoping Period for the Proposed Action

*April:* Identify issues/possible alternatives from scoping  
Specialists' Analysis

*May:* Environmental Assessment (EA)  
(If no significant impacts, proceed)

*June:* Public Comment Period on EA (30 days)

*July:* Decision Notice/Finding of No Significant Impacts (FONSI)

*Mid-July-August:* Appeal Period (45 days)

*September:* Implement

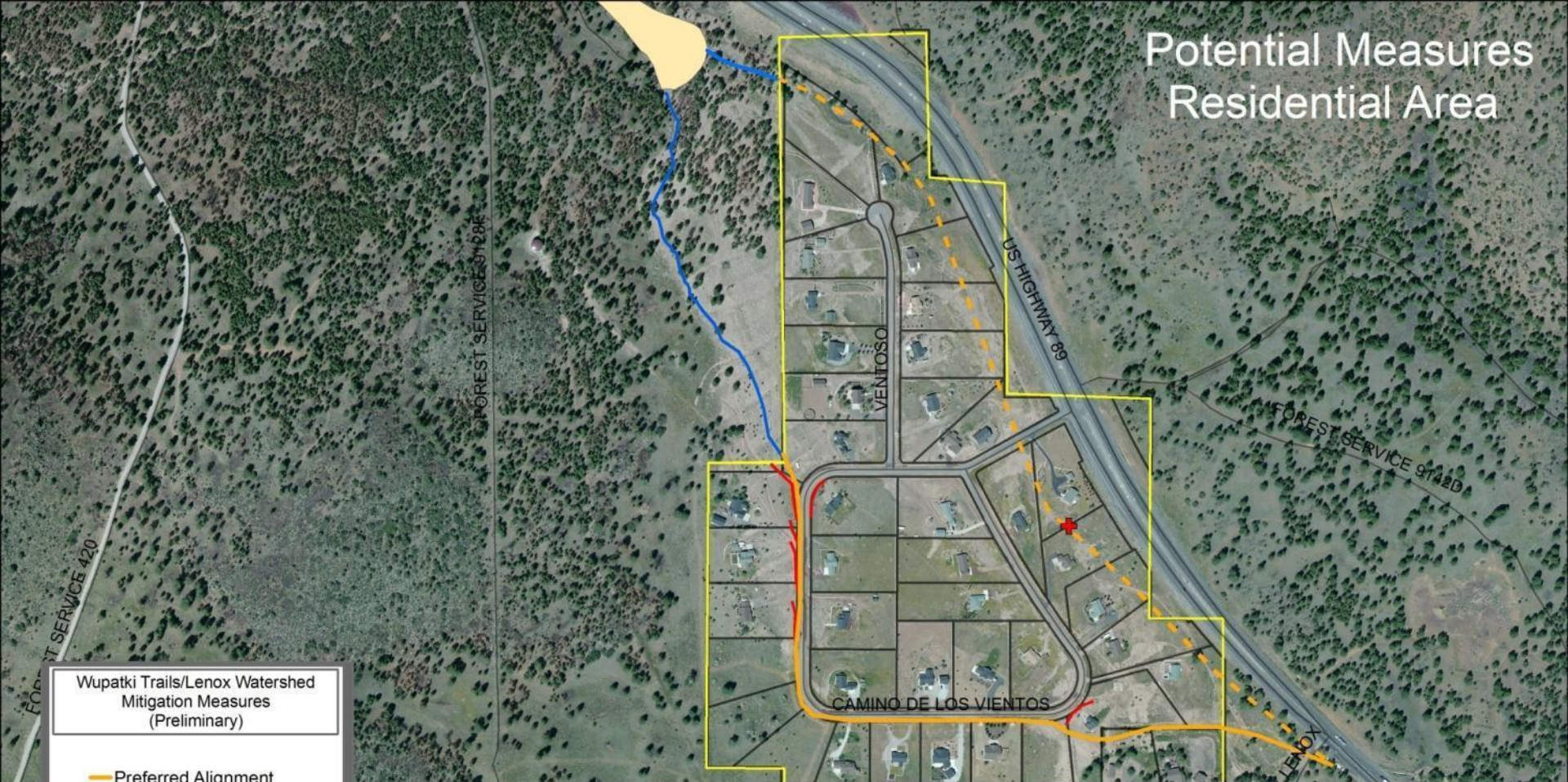




# ***Watershed Restoration and Flood Mitigation Measures***

**Natural Channel Design  
(See Handouts)**

## Potential Measures Residential Area



### Wupatki Trails/Lenox Watershed Mitigation Measures (Preliminary)

- Preferred Alignment
- Alternate Alignment
- Headcut
- Flood Walls
- Sediment Storage Area
- Channel Stabilization
- USFS Boundary

### Treatment Measures on Private and County Right-of-Way

- Channel Stabilization
- Natural Channel
- Lined Channel
- Driveway Crossing
- Road Crossing
- Earthen Berms
- Flood Walls
- Driveway Berms
- Headcut/Gully Treatment
- Critical Area Planting

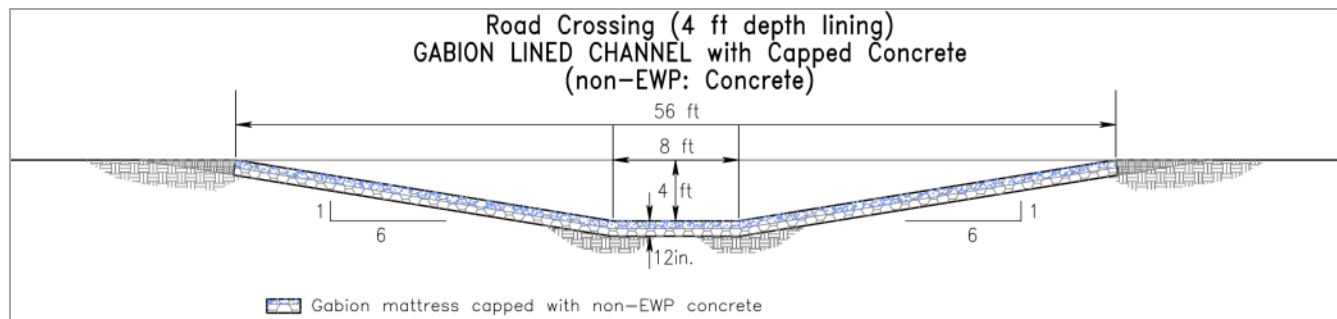
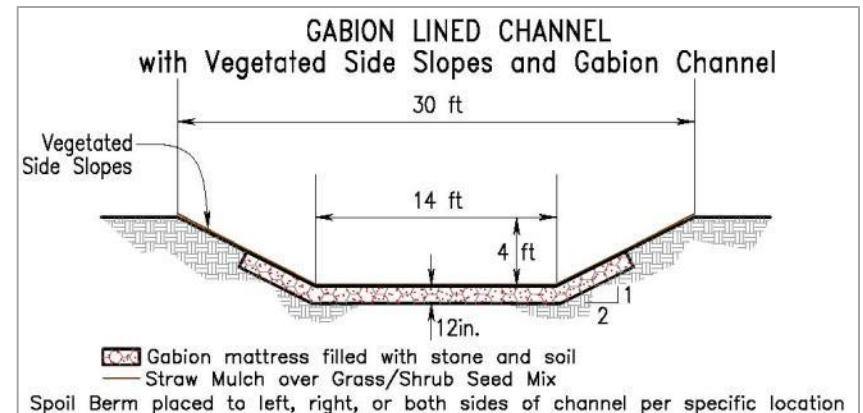
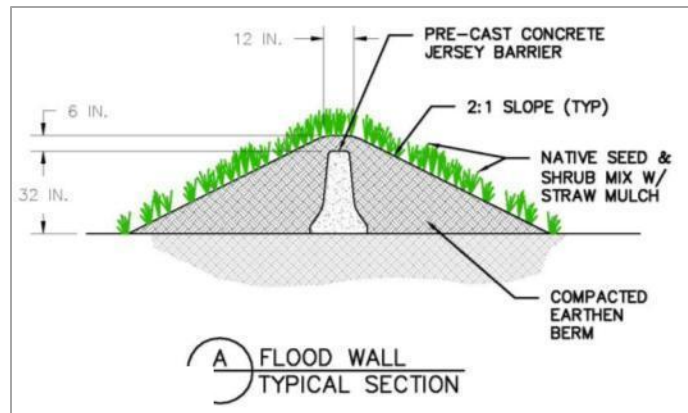
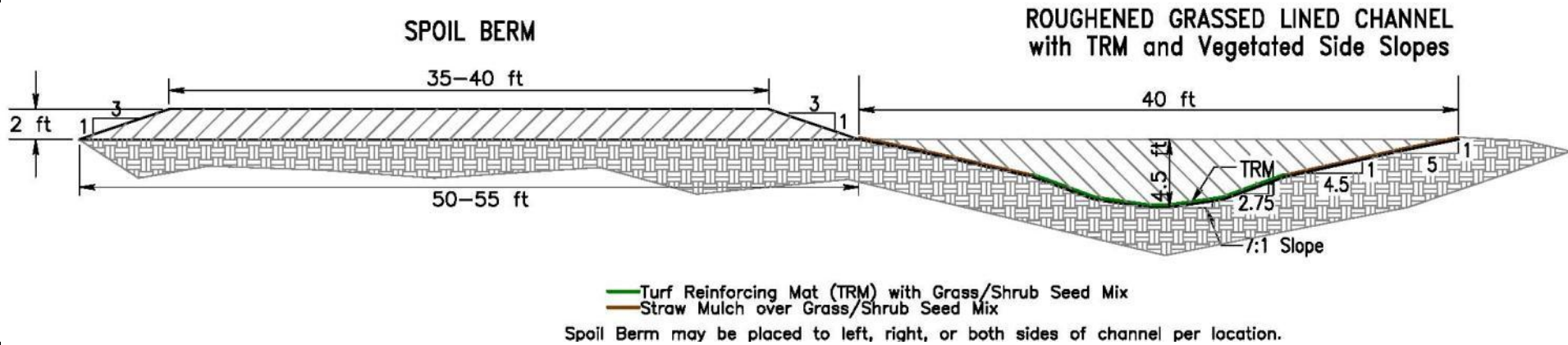
# *Preliminary Plans Wupatki Trails/Lenox*

## **Feasibility Considerations**

- **Technical Analysis**
  - Sediment and Hydraulics
- **USFS Approval of Measures and Alignments**
- **Avoidance of New Flood Risk**
- **Density of Development**
- **Conflicts**
  - Utilities
  - Septic
- **Cost**



# Typical Cross-Sections



# Channel Stabilization





## Restoration Example: The Arboretum at Flagstaff



November 2007



September 2008



October 2009



# *Questions*

Questions?



# ***Drainage Easements***

**Owner-Driven Process**  
**(See Handout)**



# ***Drainage Easements***

## **What is a Drainage Easement?**

- **An Easement is the Right of One Entity to Use a Part of Another's Property for a Specific Purpose**
- **A Drainage Easement Will Allow the County to Access and Use a Specific Portion of Your Property to Construct and Maintain Flood Mitigation and Stormwater Drainage Structures**
- **You Retain Ownership of the Land**

# ***Drainage Easements***

## **How Might Your Property Be Affected?**

- **Exact Size and Location of Easements Will Be Determined During Final Engineering**
- **Will Likely Not Affect the Zoning of Your Property**
- **Will Not Allow for Public Access to Your Property**
- **Will Temporarily Limit How You are Able to Use That Specific Portion of Your Property Until Vegetation Recovers**
- **Preliminary Designs Have Focused on Reducing Impacts to Individual Properties to the Greatest Extent Possible**

# ***Drainage Easements***

## **Will You Be Compensated?**

- **Funding is Unavailable for Purchase of Drainage Easements**
- **Therefore the County is Requesting Donations**
- **However:**
  - **You May be Entitled to a Temporary Reduction in Your Primary Property Taxes**
  - **You May Be Entitled to State and Federal Income Tax Benefits**
    - **Please Consult a Tax Professional for More Information**

# ***Drainage Easements***

## **Process and the Uniform Act**

- **Step 1 – Notice of Intent**
- **Step 2 – The Offer Package**
- **Step 3 – Review and Sign Easement Agreement**
- **Easement Process Guided by the Uniform Act and the Code of Federal Regulations**



# *Questions*

**Questions?**

## ***Next Steps***

- **Securing Right of Entry Forms Necessary for Any Further Work**
- **Continue Working Through Survey and Design Process**
- **Incorporate Public Feedback into Final Designs**
- **Additional Communications by Corridor and/or Individually**
- **Please Provide Feedback on Comment Cards**
- **Reminder – 220 Day Timeframe for EWP**



# ***Resources***

**Please Direct All Questions and  
Comments To:**

- **Schultz Flood Hotline: (928) 679-8390**
- **Schultz Flood Email:**  
**[schultzfloodmitigation@coconino.az.gov](mailto:schultzfloodmitigation@coconino.az.gov)**

**(Please Take a Refrigerator Magnet)**



# ***Map Breakout Sessions***

## **Please Help Us Improve and Refine Our Information:**

- Is your septic system correctly located and sized as shown on map? If not please draw corrections on map
- Please help us locate your utility lines:
  - Gas, Water, Electric, Cable, Phone
- Have any outbuildings or other structures been constructed since October 2010?
- Is the location and size of your driveway correct?
- Please provide any other information about your property that might help





# ***Thank You!***

- **Please Review Maps, Ask Questions and Provide Comments and Feedback**
- **Please Fill Out Comment Cards**
- **Please Provide Your E-Mail Address**